

REMARKS

In response to the Official Action dated May 13, 2003, Applicant amends the application and requests reconsideration. In the Amendment, claims 13, 14, 23, 34-36 and 44-46 have been amended. No new matter has been added. Claims 12-48 are now pending and under examination.

The specification was objected to for failing to provide antecedent basis for the limitation "a metallic base material." Applicant has replaced the limitation "a metallic base material" with "a metallic basis material," which is described in the specification, thereby overcoming the objection.

Claims 12-48 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite on various grounds. Applicant has amended the claims to overcome the rejection.

The Office Action also stated that it is unclear what type of material "a metallic basic material" is. Applicant respectfully submits that a metallic basic material may be any metallic material that is suitable for use in a transmission. When provided with a specific design specification, a person with ordinary skill in the art can determine what the suitable basic materials are, based on the established practice in the art. Therefore, it is clear to a person with ordinary skill in the art what "a metallic basic material" is. Furthermore, the specification provides several examples of metallic basic materials (see paragraph 26).

Claims 12-14, 18-23, 30-36, and 40-48 were rejected under 35 U.S.C. §103(a) as being unpatentable over Loeffler (U.S. Patent 5,560,461) in view of Madsac (U.S. Patent 4,531,984). For the following reasons, Applicant respectfully requests reconsideration and withdrawal of the rejection.

As discussed in paragraph 0006 of the specification, in making the claimed invention, Applicant became aware that sulfur particles, contained in transmission oil, settle on the applied friction layer and reduce the coefficient

friction between the friction surfaces. As a result, the torque that can be transmitted by the friction surfaces is reduced, and the synchronizing power of the shift transmission is diminished. Faced with this problem, Applicant discovered that the formation of one of non-metallic γ -connecting and non-metallic ϵ -connecting layers on the surface of at least one of the synchro rings and the intermediate ring can prevent sulfur particles from penetrating into the friction surface and, therefore, produce a relatively constant coefficient of friction between the friction surfaces.

Prior to Applicant's invention, the conventional approach is to apply a non-metallic inorganic friction lining, as discussed in paragraph 0004 of the specification. However, such an approach is costly and unreliable (paragraph 0004). Therefore, the claimed invention is an improvement over this conventional approach.

The Office Action, however, contended that it would have been obvious to apply the γ and ϵ phases of Madsac to the cone synchronizer of Loeffler. Loefflern discloses a cone synchronizer having conical friction surfaces. One of the friction surfaces has a layer of friction material (77, 78), such as friction paper, and the other surface is probably metallic. Madsac discloses γ and ϵ phases. The Office Action contends that the motivations exist to combine the teachings of the conferences, citing the motivations to improve the overall fatigue and seizure characteristics of the synchronizer rings and to increase the resistance to wear and corrosion.

Applicant respectfully submits that the alleged motivations do not exist. First, under the patent law, where claimed subject matter has been rejected as obvious in view of a combination of prior art references, a proper analysis under §103(a) requires, *inter alia*, a determination whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed invention. *See In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988). The suggestion **must be found in the prior art, not in the applicant's disclosure.** *Id.*

Applicant respectfully submits that the Office Action has failed to indicate where **in the prior art** exist the suggestions to combine the teachings of Loefflern and Madsac. The Examiner contended merely that it would have been obvious to modify Loefflern with the teachings of Madsac. However, the Office Action failed to point out where and how **the prior art** provides this suggestion, as required by *In re Dow Chemical Co.* Therefore, the rejection is improper because the suggestions **in the prior art** to combine the teachings of Loefflern and Madsac are not provided.

Additionally and alternatively, when the two friction surfaces are soft friction material (77, 78) and metallic surface, there is no evidence that applying a γ' or ϵ layer on the metallic surface improves fatigue and seizure characteristics or increase resistance to wear and corrosion. Because in this situation most of the wear is on the soft friction material (77, 78), there is no evidence that a γ' or ϵ layer on the **metallic** surface improves fatigue and wear characteristics. Additionally, there is no evidence anywhere that γ' and ϵ layers improve seizure characteristics. Furthermore, corrosion is simply not a problem because the transmission is lubricated with oil. Therefore, the motivations suggested by the Office Action to combine the teachings of the cited references simply do not exist.

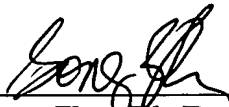
Claims 15-17, 24-29, 37-39 were rejected under 35 U.S.C. §103(a) as being unpatentable over Loeffler in view of Madsac and further in view of two other references. Since the propriety of this rejection relies on the propriety of the first rejection, this rejection is improper because, as discussed above, the first rejection is improper.

In light of the foregoing remarks, this application is considered to be in condition for allowance, and early passage of this case to issue is respectfully requested. If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #225/49630).

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